

INDUSTRIAL VISIT REPORT

Branch: Instrumentation and Control, Semester 5

College: L. D. College of Engineering

Faculty Members: Dr. T. V. Shah, Dr. V. H. Trivedi, Prof. H. K. Shastri, Mr. Vishal Patel

Date of Visit: 17/09/2024

Place of Visit: Torrent Power Plant (AMGEN)

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On 17th September 2024, the 5th-semester students of Instrumentation and Control Engineering from L.D. College of Engineering visited the Torrent Power Plant (AMGEN) as part of their academic curriculum. The visit was coordinated and guided by faculty members Dr. T. V. Shah, Dr. V. H. Trivedi, Prof. H. K. Shastri, along with the lab assistant, Mr. Vishal Patel. The objective of the visit was to gain practical insights into power generation, instrumentation, and control processes, as well as to understand the operational and safety standards at a thermal power plant.

Overview of Torrent Power Plant (AMGEN):

Torrent Power is one of the leading electricity generation companies in India, and the AMGEN facility is a significant thermal power plant. The students were introduced to various aspects of power generation, focusing on the integration of process instruments used to control and monitor the plant's operations. The plant employs advanced thermal technologies and strict safety protocols to ensure efficient and secure energy production.

Key Learning Points:

1. Power Generation Process:

- The plant utilizes thermal energy to generate electricity. The students were explained the process of converting heat energy into electrical energy, including the steps involving boilers, turbines, and generators.
- Detailed insights were provided into the working of the steam generation process and how thermal energy is captured from coal or natural gas to produce electricity.

2. Instrumentation and Control:

- Students were briefed about the various process instruments used in the plant, such as flow meters, temperature sensors, pressure transducers, and control valves.

- The role of Distributed Control Systems (DCS) in automating and regulating the power generation process was discussed in depth.
- Emphasis was placed on real-time monitoring and the importance of control systems in ensuring stable plant operations.

3. Safety Standards:

- Safety is a top priority at Torrent Power Plant, and students were introduced to the rigorous safety protocols followed on-site.
- The visit included a session on the importance of maintaining safe working conditions in thermal power plants, such as ensuring the structural integrity of boilers and maintaining safe pressure levels within the system.
- The plant's emergency handling procedures were also highlighted, showcasing the plant's preparedness for any unexpected malfunctions or hazards.

4. Thermal Power Plant Operations:

- The students gained practical knowledge of the thermal cycle, including heat recovery mechanisms and cooling systems.
- The functioning of condensers and cooling towers in recycling steam back into water for reuse in the power generation cycle was demonstrated.

5. Control Room Visit:

- One of the most insightful parts of the visit was the tour of the control room, where students observed how operators manage the entire power plant through computer-based control systems.
- The use of SCADA (Supervisory Control and Data Acquisition) systems was explained, with particular attention to the way real-time data from various sensors and instruments is used to make operational decisions.



Conclusion:

The industrial visit to Torrent Power Plant (AMGEN) provided the students with a valuable learning experience, connecting theoretical knowledge with real-world applications. The exposure to cutting-edge technologies and safety practices in power generation and instrumentation will undoubtedly benefit them in their future academic and professional careers.